

WHAT IS CLAIMED IS:

1. A 3D image reproduction apparatus comprising:
 - a display including a screen on which a plurality of pixels are arranged to display synthesis parallax images in units of arrayed sub regions, wherein each of the pixels includes three sub pixels that differ in color, and the sub pixels are laid out so that adjacent sub pixels differ in color; and
 - an optical system arranged in front of the screen of the display , forming a 3D image from synthesis parallax images displayed on the screen in units of arrayed sub regions.
2. An apparatus according to claim 1, wherein the synthesis parallax images comprise images raytraced in units of the sub pixels.
3. An apparatus according to claim 1, wherein the synthesis parallax images comprise images synthesized from a plurality of parallax images in units of the sub pixels.
4. An apparatus according to claim 1, wherein the optical system comprises a pinhole array in which pinholes are arranged corresponding to the arrayed sub regions.
5. An apparatus according to claim 1, wherein the optical system comprises a slit array in which slits are arranged corresponding to the arrayed sub regions.
6. An apparatus according to claim 1, wherein the

optical system comprises a microlens array in which micro lenses are arranged corresponding to the arrayed sub regions.

7. An apparatus according to claim 1, wherein the
5 optical system comprises a lenticular sheet in which lenses are arranged corresponding to the arrayed sub regions.

8. An apparatus according to claim 1, wherein sub pixels of the same color are laid out in a V-shaped
10 pattern.

9. A 3D image reproduction apparatus comprising:
a display including a screen on which a plurality
of pixels are arranged to display synthesis parallax
images in units of arrayed sub regions, wherein each of
15 the pixels includes three sub pixels that differ in
color, the sub pixels having respectively rectangles
extending in a substantially vertical direction of
the screen, and the sub pixels are laid out so that
adjacent sub pixels differ in color; and
20 an optical system arranged in front of the screen
of the display, forming a 3D image from synthesis
parallax images displayed on the screen in units of
arrayed sub regions.

10. An apparatus according to claim 9, wherein the
25 synthesis parallax images comprise images raytraced in
units of the sub pixels.

11. An apparatus according to claim 9, wherein the

synthesis parallax images comprise images synthesized from a plurality of parallax images in units of the sub pixels.

12. An apparatus according to claim 9, wherein the
5 optical system comprises a pinhole array in which pinholes are arranged corresponding to the arrayed sub regions.

13. An apparatus according to claim 9, wherein the
optical system comprises a slit array in which slits
10 are arranged corresponding to the arrayed sub regions.

14.. An apparatus according to claim 9, wherein the optical system comprises a microlens array in which micro lenses are arranged corresponding to the arrayed sub regions.

15 15. An apparatus according to claim 9, wherein the optical system comprises a lenticular in which lenses are arranged sheet corresponding to the arrayed sub regions.

16. An apparatus according to claim 9, wherein sub
20 pixels of the same color are laid out in a V-shaped pattern.